UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,386	01/02/2004	Jian-Kang Zhu	247354US20DIV	9333

22850 7590 04/09/2007	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.	BAUM, STUART F	
1940 DUKE STREET		
ALEXANDRIA, VA 22314	ART UNIT	PAPER NUMBER
	1638	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	04/09/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 04/09/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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	Application No.	Applicant(s)
Office Action Summary	10/749,386	ZHU ET AL.
	Examiner	Art Unit	
	Stuart F. Baum	1638	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>03 January 2007</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>36 and 43-61</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>36 and 43-61</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>02 January 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. <u>9/20/2006</u>.

5) ☐ Notice of Informal Patent Application

6) ☒ Other: <u>sequence search result</u>.

DETAILED ACTION

1.   The amendment filed 1/3/2007 has been entered.

2.   Claims 36 and 43-61 are pending.

      Claims 1-35 and 37-42 have been canceled.

      Claims 43-61 have been newly added and are drawn to the elected invention.

3.   Claims 36 and 43-61, including SEQ ID NO:1 encoding SEQ ID NO:2 are examined in

the present office action.

4.   Rejections and objections not set forth below are withdrawn.

5.   The text of those sections of Title 35, U.S. Code not included in this office action can be

found in a prior office action.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
> subject matter which the applicant regards as his invention.

6.   Claim 59 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention.

      Claim 59 recites the limitation "wherein said plant organ" in claim 36. There is

insufficient antecedent basis for this limitation in the claim.

Written Description

7.　　Claim 36 remains rejected and new claims 43-45, 47-50, 52-61 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This rejection is maintained for the reasons of record set forth in the Official action mailed 7/3/2006. Applicant's arguments filed 1/3/2007 have been fully considered but they are not persuasive.

　　　　Applicants contend the specification provides an adequate description to allow the skilled artisan to recognize what has been invented and what is claimed is adequately described in the specification (page 11 of Remarks, 1st paragraph). Applicants contend the SOS1 gene from Arabidopsis is disclosed as SEQ ID NO:1 along with the encoded protein of SEQ ID NO:2 (page 11 of Remarks, 2nd paragraph). Applicants contend the specification discloses parameters by which homology/identity can be ascertained and a description of SOS1 Na^+/H^+ antiporter activity (*Ibid*). Applicants contend several mutant forms of SOS1 are disclosed. Applicants contend one skilled in the art could use the teachings in the specification and determine sequences meeting the claimed invention (page 11 of Remarks, 3rd paragraph). Applicants have submitted an alignment of eight proteins from various species of plants having Na^+/H^+ antiporter activity (paragraph bridging pages 11 and 12 of Remarks). Applicants contend analyzing the N-terminal region of the SOS1 protein that includes the 12 transmembrane domains, the percent identities of the analyzed region among the eight selected proteins increases compared to the previous alignment, except for the moss SOS1 (page 12 of Remarks, 1st paragraph).

The Office contends that for claims drawn to SEQ ID NO:1 or polynucleotides encoding

SEQ ID NO:2, Applicants have satisfied the written description requirement. The Office

contends that for claims drawn to sequences exhibiting less than 100% sequence identity to SEQ

ID NO:1 or polynucleotides encoding polypeptides exhibiting less than 100% sequence identity

to SEQ ID NO:2, the written description requirement is not satisfied. Applicants have only

disclosed those techniques that would be required by one of skill in the art to isolate other

potential sequences. At the time of filing of the instant application, Applicants were not in

possession of the broadly claimed genus of any SOS1 protein having Na^+/H^+ antiporter activity

or any polynucleotide that is at least 70% identical to SEQ ID NO:1 or any polynucleotide that

encodes a polypeptide that is at least 70% identical to SEQ ID NO:2. The Office contends that

Applicants have not provided any publication dates associated with the aligned proteins. In fact,

the Office looked up two proteins, NHX7 and Q4W3B5 and the earliest publication date was

after the filing of the instant application. Applicants fail to describe a representative number of

polynucleotide sequences from plants encoding a SOS1 protein falling within the scope of the

claimed genus of all SOS1 genes from all plants. Furthermore, Applicants fail to describe

structural features common to members of the claimed genus of polynucleotides. Therefore, the

Office contends Applicants have not satisfied the written description requirement for the broadly

claimed genus at the time of filing of the instant application.

Enablement

8.   Claim 36 remains rejected and new claims 43-61 are rejected under 35 U.S.C. 112, first

paragraph, as containing subject matter which was not described in the specification in such a

way as to enable one skilled in the art to which it pertains, or with which it is most nearly

connected, to make and/or use the invention. This rejection is maintained for the reasons of

record set forth in the Official action mailed 7/3/2006. Applicant's arguments filed 1/3/2007

have been fully considered but they are not persuasive.

Applicants contend the specification provides a detailed explanation of cloning,

expressing and characterization of the polynucleotides and/or polypeptides that fall within the

claimed invention and how to assess the up-regulation of expression due to salt stress (page 13 of

Remarks, 4th paragraph). Applicants contend determining which sequences fall within the scope

of the claimed invention would be apparent to the skilled artisan with the present application in

hand (page 13 of Remarks, 6th paragraph). Applicants contend determining which

polynucleotide sequences fall within the scope of the claimed invention would require nothing

more than routine experimentation (page 14 of Remarks, 2nd full paragraph). Applicants contend

that each and every possible method by which the proteins' activities are increased, in and of

itself, is not sufficient to support an enablement rejection nor is the omission of a working

example (page 15 of Remarks, 1st paragraph).

The claimed invention is not supported by an enabling disclosure taking into account the

In re Wands factors (858F.2d 731, 8 USPQ2d 1400 (Fed. Cir. 1988). *In re Wands* lists a number

of factors for determining whether or not undue experimentation would be required by one

skilled in the art to make and/or use the invention. These factors are: the quantity of

experimentation necessary, the amount of direction or guidance presented, the presence or

absence of working examples of the invention, the nature of the invention, the state of the prior

art, the relative skill of those in the art, the predictability or unpredictability of the art, and the

breadth of the claim. The Office contends that the lack of working examples in and of itself, is

not sufficient to support an enablement rejection. But, taken together with the state-of-the-art

and the level of unpredictability as discussed in the office action mailed 7/3/2006, and the

breadth of the claims, the Office has determined that undue trial and error experimentation would

be required by one of skill in the art, to practice the broadly claimed invention.

Applicants state "...filling of a patent application serves as conception and constructive

reduction to practice of the subject matter described in the application (MPEP §2138.05).

Moreover, MPEP §2138.05 states 'the inventor need not provide evidence of either conception

or actual reduction to practice when relying on the content of the patent application'" (page 15 of

Remarks, 2nd paragraph).

The Office contends, that MPEP §2138.05 also states "Proof of a constructive reduction

to practice requires sufficient disclosure under the "how to use" and "how to make" requirements

of 35 U.S.C. 112, first paragraph. Kawai v. Metlesics, 480 F.2d 880, 886, 178 USPQ 158, 163

(CCPA 1973)". The Federal Circuit has repeatedly held that "the specification must teach those

skilled in the art how to make and use the full scope of the claimed invention without 'undue

experimentation'" (See MPEP 2164.08). The Office contends Applicants have not disclosed

how to make and/or use the broadly claimed invention, as stated in the office action mailed

7/3/2006, and therefore Applicants are not enabled for the broadly claimed invention.

Applicants contend Shi et al (2002, Nature Biotechnology, published online) presents

results that are in accordance with the methods set forth in the present application and provide a

"proof of principal" with respect to the functionality of the claimed invention using SOS1 from

Arabidopsis (page 15 of Remarks, 3rd paragraph). Applicants contend that Martinez-Atienza et

al (2006, Plant Physiol., Plant Physiology Preview) disclose that the present invention works

using a SOS1 sequence from rice, which has 60% identity (*Ibid*).

The Office invites Applicants to submit a 37 CFR §1.132 Declaration with the required

information to demonstrate enablement of the broadly claimed invention.

Claim Rejections - 35 USC § 102

.(a) the invention was known or used by others in this country, or patented or described in a printed publication in this
or a foreign country, before the invention thereof by the applicant for a patent.

9.   Claims 36, 43-52, 57-60 are rejected under 35 U.S.C. 102(a) as being anticipated by Liu

et al (2000, PNAS 97(7):3730-3734).

The claims are drawn to a method of increasing the salt tolerance of a plant, comprising

increasing the expression of a polynucleotide encoding a SOS1 protein, as compared to the

expression of said polynucleotide in the wild-type of said plant, or wherein said polynucleotide

comprises a sequence that is at least 70%, 80%, 90, or 100% identical to SEQ ID NO:1 or

wherein said polynucleotide encodes a polypeptide that is at least 70%, 80%, 90, 95% or 100%

identical to SEQ ID NO:2, or wherein the plant is Arabidopsis.

The Office interprets "comprising increasing the expression of a polynucleotide encoding

a SOS1 protein" to read on any method, either directly or indirectly that would increase the

expression of said polynucleotide. Applicants have stated "SOS1 mRNA was detected without

stress treatment but was significantly up-regulated by salt stress" (page 17 of specification, 2nd

paragraph).

Liu et al disclose Arabidopsis plants that are grown on media containing NaCl (see page

3733, section titled "SOS2 Expression in the Root is Up-Regulated by Salt Stress"). Therefore,

based on Applicants' own admitted statement as discussed above, said plants would have an

increased expression of SOS1 compared to wild-type plants not grown on said media. The

Office contends that SOS1 was isolated from Arabidopsis, and therefore would exhibit 100%

sequence identity with Applicants' SEQ ID NO:1 and would encode a protein exhibiting 100%

sequence identity with Applicants' SEQ ID NO:2, and as such, Liu et al anticipate the claimed

invention.

Double Patenting

10.   The nonstatutory double patenting rejection is based on a judicially created doctrine

grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or

improper time wise extension of the "right to exclude" granted by a patent and to prevent

possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010

(Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*,

686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA

1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to

overcome an actual or provisional rejection based on a nonstatutory double patenting ground

provided the conflicting application or patent is shown to be commonly owned with this

application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal

disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37

CFR 3.73(b).

Claims 36 and 43-61 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 8-11, 19-22, 29-33, 41-4452-55, 63-66 of U.S. Patent No. 6,727,408 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims are obvious over the claims of Patent No. 6,727,408 B2.

Claims 36 and 43-61 are drawn to a method of increasing the salt tolerance of a plant, comprising increasing the expression of a polynucleotide encoding a SOS1 protein, as compared to the expression of said polynucleotide in the wild-type of said plant, or wherein said polynucleotide comprises a sequence that is at least 70%, 80%, 90, or 100% identical to SEQ ID NO:1 or wherein said polynucleotide encodes a polypeptide that is at least 70%, 80%, 90, 95% or 100% identical to SEQ ID NO:2, or wherein the plant is Arabidopsis.

Claims 8-11, 19-22, 29-33, 41-4452-55, 63-66 of U.S. Patent No. 6,727,408 B2 are drawn to a transgenic plant and method of making a transgenic plant comprising introducing an isolated polynucleotide comprising a nucleic acid sequence comprising SEQ ID NO:1 or encoding the polypeptide of SEQ ID NO:2. The Office contends Applicants' SEQ ID NO:1 exhibits 100% sequence identity with SEQ ID NO:1 from U.S. Patent No. 6,727,408 B2 (sequence search results included).

Though the claims are not identical, they are not patentably distinct because the claims of U.S. Patent No. 6,727,408 B2 are drawn to a method that is encompassed by the claims of the instant application and would produce a plant that has increased salt tolerance.

11.   No claims are allowed.

12.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
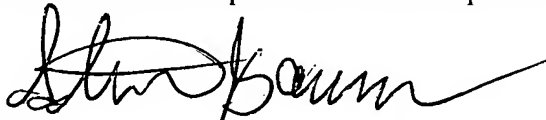
A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

13.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Stuart F. Baum whose telephone number is 571-272-0792. The

examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Anne Marie Grunberg can be reached at 571-272-0975. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is 571-272-1600.

Stuart F. Baum Ph.D.
Primary Examiner
Art Unit 1638
March 30, 2007

STUART F BAUM, PH.D
PRIMARY EXAMINER

<!--StartFragment-->RESULT 1
US-09-824-734-1
; Sequence 1, Application US/09824734
; Patent No. 6727408
; GENERAL INFORMATION:
; APPLICANT: ZHU, JIAN-KANG
; APPLICANT: SHI, HUAZHONG
; APPLICANT: ISHITANI, MANABU
;. APPLICANT: STEVENSON, BECKY
; TITLE OF INVENTION: PROTEINS AND DNA RELATED TO SALT TOLERANCE IN PLANTS
; FILE REFERENCE: 205644US20
; CURRENT APPLICATION NUMBER: US/09/824,734
; CURRENT FILING DATE: 2001-04-04
; PRIOR APPLICATION NUMBER: US 60/194,648
; PRIOR FILING DATE: 2000-04-04
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US-09-824-734-1

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Qy      961 GGTAAATGACGTTATCTTCTGTCATGGTTTGGTTAGTTTTGACATTTATGCTCACTCTTC 1020
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Db      961 GGTAAATGACGTTATCTTCTGTCATGGTTTGGTTAGTTTTGACATTTATGCTCACTCTTC 1020

Qy     1021 ATGATTTTTAACAACAATTCCAGGACGGCGATTGTTGTTTTCCAGTTATTCTTAAAGATG 1080
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     1021 ATGATTTTTAACAACAATTCCAGGACGGCGATTGTTGTTTTCCAGTTATTCTTAAAGATG 1080

Qy     1081 GCTATGGGGCAAAACTCTGACTGGAGTTCTATAATCAAATTTCTGCTTAAAGTCGCACTT 1140
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     1081 GCTATGGGGCAAAACTCTGACTGGAGTTCTATAATCAAATTTCTGCTTAAAGTCGCACTT 1140

Qy     1141 GGAGCGTATGTCTTGATCTTTTTTCATCTGTTGTTAGTGATATCAAGTTGCTGCTGTGTT 1200
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     1141 GGAGCGTATGTCTTGATCTTTTTTCATCTGTTGTTAGTGATATCAAGTTGCTGCTGTGTT 1200

Qy     1201 CTTATCAGTCCAACGTGTTCTTCTGTCTATTTAGTGTAGGCATTGGTCTGGCGTTTGGCA 1260
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     1201 CTTATCAGTCCAACGTGTTCTTCTGTCTATTTAGTGTAGGCATTGGTCTGGCGTTTGGCA 1260

Qy     1261 TTGCATCAGTTATTTGGCTCAAGTTCATATTCAATGACACTGTAATAGAGATTACTCTTA 1320
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Db      1261 TTGCATCAGTTATTTGGCTCAAGTTCATATTCAATGACACTGTAATAGAGATTACTCTTA 1320

Qy      1321 CAATTGCAGTGAGCTATTTCGCATACTACACTGTACGTCTTTCTGTAGACCTTGAATTCC 1380
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1321 CAATTGCAGTGAGCTATTTCGCATACTACACTGTACGTCTTTCTGTAGACCTTGAATTCC 1380

Qy      1381 TGTGCTAAGATATTCTCTTTGTAGTAAAACTGAGAGTTTATTGTGTGACAGGCTCAAGAG 1440
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1381 TGTGCTAAGATATTCTCTTTGTAGTAAAACTGAGAGTTTATTGTGTGACAGGCTCAAGAG 1440

Qy      1441 TGGGCTGGGGCTTCTGGTGTTTTGACGGTCATGACTTTGGGCATGTAAATTTCAGTGATC 1500
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1441 TGGGCTGGGGCTTCTGGTGTTTTGACGGTCATGACTTTGGGCATGTAAATTTCAGTGATC 1500

Qy      1501 TCGTTATTTTTTTTTCCCTTTCTTTTGTTATCATTTAAGAAGTCTCTTCTCATAAAATA 1560
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1501 TCGTTATTTTTTTTTCCCTTTCTTTTGTTATCATTTAAGAAGTCTCTTCTCATAAAATA 1560

Qy      1561 ACTGTAACAGGTTTTATGCTGCATTTGCAAGGACAGCCTTTAAAGGTGACAGTCAAAAAA 1620
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1561 ACTGTAACAGGTTTTATGCTGCATTTGCAAGGACAGCCTTTAAAGGTGACAGTCAAAAAA 1620

Qy      1621 GCTTGCATCACTTCTGGTATTTCCAGAACTTGTGGAATTTGGACTTGTTTTTTTATATTG 1680
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1621 GCTTGCATCACTTCTGGTATTTCCAGAACTTGTGGAATTTGGACTTGTTTTTTTATATTG 1680

Qy      1681 TAACTCTATGTAAAAGGTTGATCTGTGTGATATAAATTTTCCCGGTAACTTGTGCAGGGA 1740
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1681 TAACTCTATGTAAAAGGTTGATCTGTGTGATATAAATTTTCCCGGTAACTTGTGCAGGGA 1740

Qy      1741 AATGGTTGCATATATTGCAAACACTTTGATATTTATCCTCAGGTAAGGGTAAATTTTATA 1800
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1741 AATGGTTGCATATATTGCAAACACTTTGATATTTATCCTCAGGTAAGGGTAAATTTTATA 1800

Qy      1801 GACTCATATCATGCTTGTGCTTGCCAACCCTAAAATAGAAGCTCATGGGTAGAAAAAAGA 1860
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1801 GACTCATATCATGCTTGTGCTTGCCAACCCTAAAATAGAAGCTCATGGGTAGAAAAAAGA 1860

Qy      1861 GCTATTTTACTGCAGTCTACTCTTTAGCCTGGTGTTGCAATATTGACTGTGTTTCTCGTT 1920
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1861 GCTATTTTACTGCAGTCTACTCTTTAGCCTGGTGTTGCAATATTGACTGTGTTTCTCGTT 1920

Qy      1921 TTATGTTTGCAGTGGTGTTGTCATTGCTGAAGGCATTCTCGACAGTGATAAGATTGCCTA 1980
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1921 TTATGTTTGCAGTGGTGTTGTCATTGCTGAAGGCATTCTCGACAGTGATAAGATTGCCTA 1980

Qy      1981 CCAAGGTGCCATTATTTAATGTTGATAGTGTACAGTATTTTTTTCCTAGCTAAAGTAAAT 2040
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1981 CCAAGGTGCCATTATTTAATGTTGATAGTGTACAGTATTTTTTTCCTAGCTAAAGTAAAT 2040

Qy      2041 TTTGTGAACATAGTTTTGTCTGCATTTTCGACAGTTCACTGTTAATTGAAGATGAGATCT 2100
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      2041 TTTGTGAACATAGTTTTGTCTGCATTTTCGACAGTTCACTGTTAATTGAAGATGAGATCT 2100

Qy      2101 AAGTCATTACATAGGACTCCCACCTGTTATCATAGTTTTCTGTCGTTGTTAACACACCTT 2160
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      2101 AAGTCATTACATAGGACTCCCACCTGTTATCATAGTTTTCTGTCGTTGTTAACACACCTT 2160

Qy      2161 ACTGTTCATGGTCTTTGGTTCTCGAAGGATCACTAATTCCATAACGTGAATCAGTTACAA 2220
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      2161 ACTGTTCATGGTCTTTGGTTCTCGAAGGATCACTAATTCCATAACGTGAATCAGTTACAA 2220
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Qy   2221  GAATAAGAAAAAAACTGGCATTATTGGTTACGAAATATTGAGCGAAAGTTACCACTGTGC  2280
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   2221  GAATAAGAAAAAAACTGGCATTATTGGTTACGAAATATTGAGCGAAAGTTACCACTGTGC  2280

Qy   2281  TAGGACTGAGACAATTGTATTCTTTCACCAGTCTGTTATTATTATTAAGTACCTGTTAGA  2340
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   2281  TAGGACTGAGACAATTGTATTCTTTCACCAGTCTGTTATTATTATTAAGTACCTGTTAGA  2340

Qy   2341  GATGTACTGTCTTGGAACCATATATTTTTCTCTGGAACCATATCTGCATAAGGCACATG  2400
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   2341  GATGTACTGTCTTGGAACCATATATTTTTCTCTGGAACCATATCTGCATAAGGCACATG  2400

Qy   2401  ATATACTTAACTTTAACTATTTTTATATTTTGGATCTAACAACTCTTCACGACCCAAAT  2460
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   2401  ATATACTTAACTTTAACTATTTTTATATTTTGGATCTAACAACTCTTCACGACCCAAAT  2460

Qy   2461  TTCTTACAGGGAATTCATGGCGATTTCTTTTTCTGCTATACGTTTACATCCAACTATCGC  2520
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   2461  TTCTTACAGGGAATTCATGGCGATTTCTTTTTCTGCTATACGTTTACATCCAACTATCGC  2520

Qy   2521  GTGTTGTTGTTGTTGGAGTTCTATATCCACTTTTATGTCGTTTTGGCTATGGTTTGGATT  2580
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   2521  GTGTTGTTGTTGTTGGAGTTCTATATCCACTTTTATGTCGTTTTGGCTATGGTTTGGATT  2580

Qy   2581  GGAAAGAATCCATTATACTCGTATGGTCTGGTTTGAGGGGCGCAGTGGCTCTTGCACTTT  2640
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   2581  GGAAAGAATCCATTATACTCGTATGGTCTGGTTTGAGGGGCGCAGTGGCTCTTGCACTTT  2640

Qy   2641  CTTTATCCGTGAAGGTTAATTTTAAGAACATCTGTTAAAGTTGTTCTTCTCTCTTAAATT  2700
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   2641  CTTTATCCGTGAAGGTTAATTTTAAGAACATCTGTTAAAGTTGTTCTTCTCTCTTAAATT  2700

Qy   2701  TCTGCACAATGTTTTTTTCCAGCCACATTGATTCTGTGCTGACTTACTCGCACTCATTTG  2760
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   2701  TCTGCACAATGTTTTTTTCCAGCCACATTGATTCTGTGCTGACTTACTCGCACTCATTTG  2760

Qy   2761  ATTCAGCAATCAAGCGGAAATTCACATATCAGCAAGGAGACTGGAACATTGGTAAGTTAG  2820
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   2761  ATTCAGCAATCAAGCGGAAATTCACATATCAGCAAGGAGACTGGAACATTGGTAAGTTAG  2820

Qy   2821  TCTAAAGATGTTATTGACAACTTAAAATGATTATGCAAATTATTGTTTTGTCTCTTCATA  2880
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   2821  TCTAAAGATGTTATTGACAACTTAAAATGATTATGCAAATTATTGTTTTGTCTCTTCATA  2880

Qy   2881  TTCTCAGTTCTTTTGCAGTTTCTTTTCTTCACGGGTGGAATTGTGTTCCTAACTCTGATA  2940
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   2881  TTCTCAGTTCTTTTGCAGTTTCTTTTCTTCACGGGTGGAATTGTGTTCCTAACTCTGATA  2940

Qy   2941  GTTAATGGATCCACTACCCAATTTGTTCTACGCCTTCTTCGCATGGATATTTTACCAGCC  3000
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   2941  GTTAATGGATCCACTACCCAATTTGTTCTACGCCTTCTTCGCATGGATATTTTACCAGCC  3000

Qy   3001  CCCAAGGTCAAAAACTTCTCTCATACGAATAACTTTCCGAGTTTTAAGTAATCAAATATA  3060
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3001  CCCAAGGTCAAAAACTTCTCTCATACGAATAACTTTCCGAGTTTTAAGTAATCAAATATA  3060

Qy   3061  TGTGTAAACAGAGATTTTTTTGCTTATGCTTTGTATTCATGTGTAAGTGACCGTGTTAGC  3120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3061  TGTGTAAACAGAGATTTTTTTGCTTATGCTTTGTATTCATGTGTAAGTGACCGTGTTAGC  3120
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Qy    3121 CTGAGTCTGAGCCTTTAAGCTGTATAGTTCAATAGGGTCTGTATGTTCTAGTCAGTAATG 3180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3121 CTGAGTCTGAGCCTTTAAGCTGTATAGTTCAATAGGGTCTGTATGTTCTAGTCAGTAATG 3180

Qy    3181 TATTCGAAGAACCTTATTAGAAACCACTTTCCTTTTGACAGAAACGAATATTGGAATATA 3240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3181 TATTCGAAGAACCTTATTAGAAACCACTTTCCTTTTGACAGAAACGAATATTGGAATATA 3240

Qy    3241 CAAAGTACGAAATGTTGAATAAGGCCTTACGAGCGTTTCAAGATCTAGGAGACGATGAGG 3300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3241 CAAAGTACGAAATGTTGAATAAGGCCTTACGAGCGTTTCAAGATCTAGGAGACGATGAGG 3300

Qy    3301 AGCTAGGACCTGCTGACTGGCCTACAGTTGAAAGTTATATTTCAAGCCTAAAAGGTTCAG 3360
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3301 AGCTAGGACCTGCTGACTGGCCTACAGTTGAAAGTTATATTTCAAGCCTAAAAGGTTCAG 3360

Qy    3361 AAGGGGAACTAGTTCATCATCCTCACAATGGCTCTAAAATTGGAAGTCTTGACCCTAAAA 3420
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3361 AAGGGGAACTAGTTCATCATCCTCACAATGGCTCTAAAATTGGAAGTCTTGACCCTAAAA 3420

Qy    3421 GTTTAAAGGACATACGTATGCGGTTCTTAAATGGTAGTTATGATCATGTACCCTCCAATA 3480
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3421 GTTTAAAGGACATACGTATGCGGTTCTTAAATGGTAGTTATGATCATGTACCCTCCAATA 3480

Qy    3481 TACTATTTTACCTGGTAGATTATTGACACTTTGAAAATTGGTTGTGTCAGGTGTGCAAGC 3540
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3481 TACTATTTTACCTGGTAGATTATTGACACTTTGAAAATTGGTTGTGTCAGGTGTGCAAGC 3540

Qy    3541 AACTTACTGGGAGATGCTTGATGAGGGCAGAATATCTGAAGTTACTGCTAATATTTTGAT 3600
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3541 AACTTACTGGGAGATGCTTGATGAGGGCAGAATATCTGAAGTTACTGCTAATATTTTGAT 3600

Qy    3601 GCAGTCAGTGGATGAGGCGCTTGATCAGGTTTCTACAACTTTATGTGATTGGAGAGGTCT 3660
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3601 GCAGTCAGTGGATGAGGCGCTTGATCAGGTTTCTACAACTTTATGTGATTGGAGAGGTCT 3660

Qy    3661 AAAACCACATGTCAATTTCCCAAATTACTACAACTTTCTTCATTCTAAAGTTGTCCCACG 3720
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3661 AAAACCACATGTCAATTTCCCAAATTACTACAACTTTCTTCATTCTAAAGTTGTCCCACG 3720

Qy    3721 CAAGTTGGTCACATACTTTGCTGTCGAAAGACTAGAATCTGCTTGCTACATTTCTGCTGC 3780
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3721 CAAGTTGGTCACATACTTTGCTGTCGAAAGACTAGAATCTGCTTGCTACATTTCTGCTGC 3780

Qy    3781 GTTTCTTCGCGCACATACAATTGCACGACAGCAATTGTATGATTTTCTAGGTATGTACAA 3840
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3781 GTTTCTTCGCGCACATACAATTGCACGACAGCAATTGTATGATTTTCTAGGTATGTACAA 3840

Qy    3841 TCCATACTCTGCAGTCTGCATCACACTTTGAAAACAATGACTAAGAATAAAACTTGTACC 3900
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3841 TCCATACTCTGCAGTCTGCATCACACTTTGAAAACAATGACTAAGAATAAAACTTGTACC 3900

Qy    3901 GTATCATCATTAATTGTCAGAGTTTTTGTTTGCAAGTATCTCAACTTAGTAAGAACAATA 3960
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3901 GTATCATCATTAATTGTCAGAGTTTTTGTTTGCAAGTATCTCAACTTAGTAAGAACAATA 3960

Qy    3961 CATTAACCCAACCCTAGTTTTGTCTCATACTTATCTATCTTCTCTACACAGGGGAGAGTA 4020
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3961 CATTAACCCAACCCTAGTTTTGTCTCATACTTATCTATCTTCTCTACACAGGGGAGAGTA 4020

Qy    4021 ATATTGGTTCCATTGTAATCAATGAAAGTGAAAAGGAAGGAGAGGAAGCAAAAAAGTTCT 4080
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           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4021 ATATTGGTTCCATTGTAATCAATGAAAGTGAAAAGGAAGGAGAGGAAGCAAAAAAGTTCT 4080

Qy    4081 TGGAAAAAGTCCGATCTTCATTTCCTCAGGTTGAGAGTCTTGTCATTTCTTTCGGGTGAC 4140
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4081 TGGAAAAAGTCCGATCTTCATTTCCTCAGGTTGAGAGTCTTGTCATTTCTTTCGGGTGAC 4140

Qy    4141 TTATCTTTCTTGCGGTGAGGCACATATAATCTTTGATTAACATTGGTTTCAGGTTCTCCG 4200
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4141 TTATCTTTCTTGCGGTGAGGCACATATAATCTTTGATTAACATTGGTTTCAGGTTCTCCG 4200

Qy    4201 TGTTGTGAAAACAAAACAAGTAACATATTCAGTGTTGAATCATTTACTCGGTTACATTGA 4260
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4201 TGTTGTGAAAACAAAACAAGTAACATATTCAGTGTTGAATCATTTACTCGGTTACATTGA 4260

Qy    4261 AAACCTCGAGAAGGTTGGCTTGTTGGAGGAAAAAGAAATCGCTCATCTTCATGATGCTGT 4320
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4261 AAACCTCGAGAAGGTTGGCTTGTTGGAGGAAAAAGAAATCGCTCATCTTCATGATGCTGT 4320

Qy    4321 CCAGGTACCAAATTAAAGAATCTCATTCCTTCAACTATAGTCTTGTCTCTTTTGTCTTAT 4380
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4321 CCAGGTACCAAATTAAAGAATCTCATTCCTTCAACTATAGTCTTGTCTCTTTTGTCTTAT 4380

Qy    4381 GCTTTTGGTCAAATCTATCTCTGCAGACCGGCTTGAAAAAGCTTTTGAGAAACCCTCCAA 4440
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4381 GCTTTTGGTCAAATCTATCTCTGCAGACCGGCTTGAAAAAGCTTTTGAGAAACCCTCCAA 4440

Qy    4441 TAGTTAAACTTCCAAAATTGAGCGACATGATCACCTCACATCCGTTATCGGTTGCTCTTC 4500
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4441 TAGTTAAACTTCCAAAATTGAGCGACATGATCACCTCACATCCGTTATCGGTTGCTCTTC 4500

Qy    4501 CTCCTGCATTTTGTGAACCTTTAAAACACTCGAAAAAAGAACCAATGAAACTGCGTGGTG 4560
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4501 CTCCTGCATTTTGTGAACCTTTAAAACACTCGAAAAAAGAACCAATGAAACTGCGTGGTG 4560

Qy    4561 TCACGCTTTATAAAGAAGGTTCAAAGCCAACTGGAGTCTGGCTTATTTTTGATGGCATCG 4620
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4561 TCACGCTTTATAAAGAAGGTTCAAAGCCAACTGGAGTCTGGCTTATTTTTGATGGCATCG 4620

Qy    4621 TTAAGGTAACCCAAAACTTATCTTTTACTTTTAACTCGTAAGTCTGTATGATCTATTACC 4680
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4621 TTAAGGTAACCCAAAACTTATCTTTTACTTTTAACTCGTAAGTCTGTATGATCTATTACC 4680

Qy    4681 TTCATAACTGAATGTTATAACAATCCTACAGTGGAAAAGTAAGATCTTAAGCAACAATCA 4740
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4681 TTCATAACTGAATGTTATAACAATCCTACAGTGGAAAAGTAAGATCTTAAGCAACAATCA 4740

Qy    4741 CTCGCTGCATCCAACTTTTTCTCACGGTAGTACATTGGGACTCTACGAAGTCCTCACTGG 4800
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4741 CTCGCTGCATCCAACTTTTTCTCACGGTAGTACATTGGGACTCTACGAAGTCCTCACTGG 4800

Qy    4801 GAAGCCATATCTGTGCGACTTGATTACAGATTCTATGGTTCTTTGCTTTTTCATTGATAG 4860
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4801 GAAGCCATATCTGTGCGACTTGATTACAGATTCTATGGTTCTTTGCTTTTTCATTGATAG 4860

Qy    4861 CGAGAAAATTCTATCACTACAATCAGATTCTACCATCGATGATTTCCTTTGGCAGGTACG 4920
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4861 CGAGAAAATTCTATCACTACAATCAGATTCTACCATCGATGATTTCCTTTGGCAGGTACG 4920

Qy    4921 TCTCTATTAGAATCCATTTTAGAGAGACTCATTTCTTGATTGTTAAGTTGCTTCAACTTT 4980
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Db    4921 TCTCTATTAGAATCCATTTTAGAGAGACTCATTTCTTGATTGTTAAGTTGCTTCAACTTT 4980

Qy    4981 TTTCGGTTTTTTTGTTTGCAGGAAAGTGCATTGGTTCTTCTCAAACTCTTGCGTCCTCA 5040
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4981 TTTCGGTTTTTTTGTTTGCAGGAAAGTGCATTGGTTCTTCTCAAACTCTTGCGTCCTCA 5040

Qy    5041 GATATTTGAAAGTGTGGCAATGCAAGAATTACGAGCCCTTGTTTCAACTGAAAGCTCGAA 5100
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    5041 GATATTTGAAAGTGTGGCAATGCAAGAATTACGAGCCCTTGTTTCAACTGAAAGCTCGAA 5100

Qy    5101 ACTTACAACATATGTGACGGGAGAATCAATCGAAATCGACTGCAACAGCATTGGTTTATT 5160
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    5101 ACTTACAACATATGTGACGGGAGAATCAATCGAAATCGACTGCAACAGCATTGGTTTATT 5160

Qy    5161 ATTAGAAGGATTCGTAAAACCGGTTGGTATCAAAGAAGAGCTTATATCATCTCCCGCCGC 5220
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    5161 ATTAGAAGGATTCGTAAAACCGGTTGGTATCAAAGAAGAGCTTATATCATCTCCCGCCGC 5220

Qy    5221 ATTATCACCTTCTAACGGGAATCAAAGCTTCCATAATTCATCAGAAGCTTCAGGTAATTA 5280
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    5221 ATTATCACCTTCTAACGGGAATCAAAGCTTCCATAATTCATCAGAAGCTTCAGGTAATTA 5280

Qy    5281 ATTGCACAGTACAGCAGGATCAAACCTTTTTAAATGTCAGCGAATGATATAAATCGAATT 5340
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    5281 ATTGCACAGTACAGCAGGATCAAACCTTTTTAAATGTCAGCGAATGATATAAATCGAATT 5340

Qy    5341 AAATCAAAAATGTGTTTTGTTTTTTTGACCACAGGTATCATGAGAGTCAGTTCTCACAA 5400
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    5341 AAATCAAAAATGTGTTTTGTTTTTTTGACCACAGGTATCATGAGAGTCAGTTCTCACAA 5400

Qy    5401 CAAGCAACACAGTATATTGTTGAGACGAGAGCAAGAGCAATCATCTTCAACATTGGAGCA 5460
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    5401 CAAGCAACACAGTATATTGTTGAGACGAGAGCAAGAGCAATCATCTTCAACATTGGAGCA 5460

Qy    5461 TTTGGAGCTGATAGGACTCTACATCGAAGACCATCTTCGTTAACACCACCACGTAGCTCA 5520
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    5461 TTTGGAGCTGATAGGACTCTACATCGAAGACCATCTTCGTTAACACCACCACGTAGCTCA 5520

Qy    5521 AGCTCTGATCAGCTTCAGAGATCATTTCGTAAAGAACACAGAGGTCTCATGAGCTGGCCT 5580
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    5521 AGCTCTGATCAGCTTCAGAGATCATTTCGTAAAGAACACAGAGGTCTCATGAGCTGGCCT 5580

Qy    5581 GAAAATATTTACGCCAAACAACAACAAGAGATCAATAAAACGACATTAAGTTTATCTGAA 5640
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    5581 GAAAATATTTACGCCAAACAACAACAAGAGATCAATAAAACGACATTAAGTTTATCTGAA 5640

Qy    5641 CGAGCAATGCAACTCAGCATTTTCGGCAGCATGGTAAAAAAGATCTCAATGTTGATTCTT 5700
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    5641 CGAGCAATGCAACTCAGCATTTTCGGCAGCATGGTAAAAAAGATCTCAATGTTGATTCTT 5700

Qy    5701 TTAAAGGTTGTTATCGATGAACTTCTCGACTAACCTGAAGGTTTTTATCTTCTGATATTC 5760
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    5701 TTAAAGGTTGTTATCGATGAACTTCTCGACTAACCTGAAGGTTTTTATCTTCTGATATTC 5760

Qy    5761 TCGAATATAGGTTAATGTGTACAGAAGGAGTGTAAGTTTCGGTGGGATCTATAATAACAA 5820
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    5761 TCGAATATAGGTTAATGTGTACAGAAGGAGTGTAAGTTTCGGTGGGATCTATAATAACAA 5820

Qy    5821 GTTACAAGATAACTTGTTGTACAAAAAACTTCCACTAAACCCAGCTCAAGGTCTCGTTTC 5880
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    5821 GTTACAAGATAACTTGTTGTACAAAAAACTTCCACTAAACCCAGCTCAAGGTCTCGTTTC 5880
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Qy   5881 AGCCAAATCAGAAAGTTCAATTGTGACCAAGAAGCAGCTTGAAACCCGTAAACATGCGTG 5940
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   5881 AGCCAAATCAGAAAGTTCAATTGTGACCAAGAAGCAGCTTGAAACCCGTAAACATGCGTG 5940

Qy   5941 TCAGCTTCCTCTGAAAGGGGAAAGCAGCACAAGGCAAAATACGATGGTTGAATCAAGCGA 6000
          |||||||||||||||||||||||||||||||||||||||||||||||||.||||||||||
Db   5941 TCAGCTTCCTCTGAAAGGGGAAAGCAGCACAAGGCAAAATACGATGGTTGAATCAAGCGA 6000

Qy   6001 TGAAGAAGATGAAGATGAAGGAATCGTTGTGAGAATCGATTCTCCGAGTAAAATCGTTTT 6060
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   6001 TGAAGAAGATGAAGATGAAGGAATCGTTGTGAGAATCGATTCTCCGAGTAAAATCGTTTT 6060

Qy   6061 CAGGAACGATCTATGA 6076
          ||||||||||||||||
Db   6061 CAGGAACGATCTATGA 6076
```

`<!--EndFragment-->`